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10/537,275	03/06/2006	Robert Mark Porter	282545US8XPCT	1131

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CHEN, CHIA WEI A

ART UNIT	PAPER NUMBER
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2622

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/537,275	Applicant(s) PORTER ET AL.	
	Examiner CHIA-WEI A. CHEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-50 and 54-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-50 and 54-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 30 March 2010 have been fully considered but they are not persuasive.

Applicant argues with respect to pending independent claims 29 and 49 that “the face detecting in Potts is not responsive to a lens focus and a zoom setting to obtain an expected face size” (page 10 of Applicant’s Remarks filed 30 March 2010).

However, Examiner respectfully disagrees. In col. 10, lines 35-52, Potts discloses a face detection method that compares the size of a detected potential face segment in an image with a default image size at that range. That is, “the video face location module 102 determines whether the size of the face segment corresponds to a default size of the image of a typical or preselected standard head given the camera range value” (emphasis added, col. 10, lines 40-44). The camera range value is described by pan, tilt, and zoom angles: “pan, tilt, and zoom angles which describe the direction of the speaker relative to camera 14 and range or distance from camera 14 to the speaker” (col. 8, lines 15-20).

Although the Potts does not expressly teach that a lens focus value is used for the range or zoom determination, it would have been obvious to a person having ordinary skill in the art to have understood that the zoom position is directly tied to the lens focus, and that an accurate lens focus would be required to obtain an accurate range value for the location module of Potts.

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Therefore, the prior art of Potts teaches the newly amended limitations of the independent claims. Thus, the pending claims remain rejected.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 54 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains the recitation of “means for transmitting the program code for execution” which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 54 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 54, the claim limitation “means for transmitting the program code for execution” has no corresponding structure in the specification.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Claims 29, 32-39, 43, 46-50, and 54-56 rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956).

Claim 29, Potts teaches a video camera arrangement, in Fig. 3, comprising:
an image capture device (camera 14) having an associated lens (a lens is inherent in a camera) with an adjustable focus and/or zoom and/or aperture setting (col. 6, lines 21-23);

a face detector (video face location module 102) for detecting human faces in images captured by the image capture device and for generating face data identifying detected occurrences of faces in the captured images (video face location module 102 analyzes video signals 24 to detect faces in a single video frame; col. 7, lines 59-61), the face detector being responsive to a zoom setting to obtain an expected face size within the captured images (It is inherent that the face locator detects a face based on the capture image frame which is, in turn, determined by the focus, zoom, or aperture of the optical system of the camera);

a data handling medium by which data representing the captured images is transmitted and/or stored, the data handling medium comprising a storage medium for storing the captured images (video frames 24 are stored as digital data in a memory storage unit; col. 7, lines 47-49) and a metadata store for storing metadata associated

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with the captured images (track files that correspond to detected faces and stores parameters for that face, as well as track pan, tilt, range values of the camera; col. 12, lines 44, 50-52), the metadata including the face data generated by the face detector and the zoom setting; and

a processor for generating data to be transmitted or stored by the data handling medium in dependence on the detection of faces in the captured images (processor in col. 6, line 67-col. 7, line 10; see also: coder/decoder 30 that compresses the audio and video signals and supplies the signals to a network interface 40 which transmits the signals across a telecommunication network 42; col. 6, lines 54-60)

but Potts does not expressly teach that a lens focus is used to obtain an expected face size within the capture images and that the metadata store includes the lens focus setting in the metadata.

However, it would have been obvious to a person having ordinary skill in the art to have realized that the zoom position is directly tied to the lens focus (a camera lens is focused by changing the zoom position), and that an accurate lens focus would be required to obtain an accurate range value for the location module of Potts.

Furthermore, since various camera parameters such as pan, tilt, and range values, it would also have been obvious to a person having ordinary skill in the art to have included lens focus data in the track file in order to provide the face location tracking module with more information to facilitate the associate currently detected faces with previously detected faces and to frame camera shots to track a moving speaker. (See col. 12, lines 31-43.)

Claim 32, Potts teaches a camera arrangement according to claim 29, in which the metadata store comprises:

a storage device external to the camera arrangement (audio and video signals are transmitted via a telecommunication network 42 to a receiving video conference system; col. 6, lines 56-60);

but does not expressly teach a wireless link between the camera arrangement and the storage device.

However, **OFFICIAL NOTICE** is taken that wireless links, i.e., wireless telecommunications networks are well known and expected in the art. At the time the invention was made, it would have been obvious to a person having ordinary skill in the art to have provided a wireless link between the camera and the receiving storage device in order to remotely access and control the camera in a convenient manner.

Since Applicant has failed to traverse the examiner's assertion that that wireless links, i.e., wireless telecommunications networks are well known and expected in the art, this common knowledge or well-known in the art statement is taken to be admitted prior art.

Claim 33, Potts teaches a camera arrangement according to claim 29, in which: the face detector (video face location module 102) is operable to detect a probability of a human face being present in each field or frame of the captured video material (Video face location module 102 calculates face segments with spatial luma

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and temporal luma variances above a predetermined threshold to determine face segments that are likely true images of a face; col. 11, lines 14-17, 34-37 and col. 11, line 65-col. 12, line 7); and

the metadata store is operable to store a representation of at least one face from each contiguous sequence of captured video material, that face being the face having the highest associated probability from the contiguous sequence (Based on the above calculations, the face tracking module 106 updates the track files corresponding to the detected faces and stores parameters for those faces; col. 12, lines 35-45).

Claim 34, Potts teaches a camera arrangement according to claim 29, the camera arrangement being a unitary device (See Figs. 1-3).

Claim 35, Potts teaches a camera arrangement according to claim 29, the data handling medium being operable to store and/or transmit data representing captured audio material associated with the captured video material (coder/decoder 30 compresses the audio and video signals and supplies the signals to a network interface 40 which transmits the signals across a telecommunication network 42; col. 6, lines 54-60).

Claim 36, Potts teaches a camera arrangement according to claim 35, comprising a speech detector (audio source locator 28); and in which the face detector

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is responsive to a detection of speech in the captured audio material (see claim 55 of Potts).

Claim 37, Potts teaches a camera arrangement according to claim 35, having two or more associated microphones (microphone array 12), the processor and/or face detector being responsive to audio signals from the microphones to identify a face associated with a current speaker (framing module 116 uses audio information to frame a camera shot on a face of a single speaker or a group of speakers; see col. 19, line 10-15).

Claim 38, Potts teaches a camera arrangement according to claim 35, comprising logic, responsive to the face detector (frame locator 116 uses determination made by face locator 102), to derive a subset of at least some of the captured images for storage and/or transmission by the data handling medium (frame locator 116 can frame a camera shot to capture a single speaker or a group of speakers to transmit across the telecommunications network; col. 19, lines 29-31).

Claim 39, Potts teaches a camera arrangement according to claim 38, in which the subset comprises a cropped image containing at least each face detected by the face detector (frame locator 116 frames the camera shot to contain currently detected faces; see col. 19, lines 29-31, 34-37, and 44-52).

Claim 43, Potts teaches a camera arrangement according to claim 38, in which the subset, in respect of a captured image, comprises a cropped image representing a single detected face (frame locator 116 can frame a camera shot to capture a single speaker to transmit across the telecommunications network; col. 19, lines 29-31).

Claim 46, Potts teaches a camera arrangement according to claim 35, comprising logic, responsive to the face detector, to control the lens zoom and/or direction of the image capture device in dependence upon the face data (The results of the face tracking module 106 are used for framing camera shots to track a moving speaker; col. 12, lines 39-43).

Claim 47, Potts teaches a video conferencing arrangement (col. 6, lines 16-23) including the camera arrangement according to claim 35, comprising two or more video conferencing systems (col. 6, lines 59-60), each system arrangement having an associated display arrangement (It is inherent that a video conferencing system include a display to display at least the video data received from the remote participant.), the data handling medium being a transmission medium (telecommunications network 42) linking the two or more video conferencing systems.

Although Potts does not explicitly teach that both video conferencing systems are of the camera arrangement according to claim 35, it would have been obvious to a person having ordinary skill in the art to have used the camera arrangement taught by Potts to track moving speakers at both ends of the video conferencing.

Claim 48, Potts teaches a camera arrangement according to claim 35, but does not expressly teach wherein the camera arrangement is used for security monitoring.

However, it would have been obvious to a person having ordinary skill in the art at the time of invention to have recognized that the camera arrangement of Potts observes and follows a person (col. 12, lines 39-42) and could similarly be used as a security monitoring device to track a moving person in a given area.

Claim 49, Potts teaches a method of operating a video camera arrangement having an image capture device (camera 14) with an associated lens (a lens is inherent in a camera) having an adjustable focus and/or zoom and/or aperture setting (col. 6, lines 21-23), a storage medium for storing captured images (video frames 24 are stored as digital data in a memory storage unit; col. 7, lines 47-49) and a metadata store for storing metadata associated with the captured video material (track files that correspond to detected faces and stores parameters for that face, as well as track pan, tilt, range values of the camera; col. 12, lines 44, 50-52), the method comprising the steps of:

detecting human faces the captured images and generating face data identifying detected occurrences of faces in the captured images (video face location module 102 analyzes video signals 24 to detect faces in a single video frame; col. 7, lines 59-61), the face detecting responsive to a zoom setting to obtain an expected face size within the captured images (It is inherent that the face locator detects a face based on the

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capture image frame which is, in turn, determined by the focus, zoom, or aperture of the optical system of the camera); and

generating data representing the captured images for storage and/or transmission, in dependence on the face data generated by the face detector (coder/decoder 30 compresses the audio and video signals and supplies the signals to a network interface 40 which transmits the signals across a telecommunication network 42; col. 6, lines 54-60), wherein

metadata stored with the captured images includes the face data generated by the face detecting and the zoom setting (track files that correspond to detected faces and stores parameters for that face, as well as track pan, tilt, range values of the camera; col. 12, lines 44, 50-52).

but Potts does not expressly teach that a lens focus is used to obtain an expected face size within the capture images and that the metadata store includes the lens focus setting in the metadata.

However, it would have been obvious to a person having ordinary skill in the art to have realized that the zoom position is directly tied to the lens focus (a camera lens is focused by changing the zoom position), and that an accurate lens focus would be required to obtain an accurate range value for the location module of Potts.

Furthermore, since various camera parameters such as pan, tilt, and range values, it would also have been obvious to a person having ordinary skill in the art to have included lens focus data in the track file in order to provide the face location tracking module with more information to facilitate the associate currently detected faces with

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previously detected faces and to frame camera shots to track a moving speaker. (See col. 12, lines 31-43.)

Claims 50 and 54, Potts teaches a computer readable storage medium have program code that when executed performs a method according to claim 49 (modules can be implemented by an appropriately programmed processor; col. 6, line 65-col. 7, line 3). It is inherent in the system of Potts that the instructions must be transferred (read) from the program storage memory to the processor in order to be executed (See also col. 6, line 65-col. 7, line 3).

Claim 55, Potts teaches the video camera arrangement according to Claim 29, wherein the face detector is further responsive to a break between contiguous video shots to reset a face-tracking filter between the contiguous video shots (For each start of a new camera move, the track files for tracking faces are initialized to begin a new set of tracking operations. See Fig. 9 and col. 12, line 60-col. 13, line 14.).

Claim 56 is analyzed and rejected as the method claim performing the steps of claim 55.

8. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956) in view of Patton (US 6,408,301).

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Claim 30, Potts teaches a camera arrangement according to claim 29, but does not expressly teach that the metadata store is arranged to store metadata on the same storage medium as the captured video material.

Patton teaches that the metadata store is arranged to store metadata (metadata associated with a captured image or motion sequence) on the same storage medium (DVD disk 16) as the captured video material (See Fig. 12 and col. 6, lines 42-47 and 60-65).

It would have been obvious to a person having ordinary skill in the art to have used the teaching of Patton with that of Potts in order to provide a system capable of automatically indexing and sorting a plurality of images for a faster and more intuitive user access. (See col. 1, lines 39-67 of Patton.)

Claim 31, Patton teaches that the metadata store comprises a removable storage device connectable to the camera arrangement (the image data is captured on removable media; see col. 3, lines 54-55).

9. Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956) in view of Edanami (US 6,297,846).

Claim 40, Potts teaches a camera arrangement according to claim 38, but does not teach that subset, in respect of a captured image, comprises a number of cropped

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images equal to the number of detected faces in that captured image, each cropped image representing one detected face.

Edanami teaches that a captured image (Fig. 19a) comprises a number of cropped images (three cropped images representing of Fig. 19C, D, E) equal to the number of detected faces in that captured image, each cropped image representing one detected face (Fig. 19) (See col. 20, lines 3-10).

It would have been obvious to a person having ordinary skill in the art to have used the teaching of Edanami with that of Potts in order to allow a remote user to choose a particular person to focus on by clicking his/her image in a group shot. This allows a person to more clearly focus on the current speaker or another participant at the video conferencing location. (See col. 20, lines 6-10 of Edanami.)

Claim 41, Edanami teaches a user control for selecting display properties of each of the cropped images (operator can choose a particular person to focus on; col. 20, lines 8-10).

Claim 42, Potts teaches that the data handling medium is a transmission medium (telecommunication network 42), but does not expressly teach that the user control relates to a remote node of the transmission medium.

Edanami teaches wherein the display remote from the camera and the captured scene can be manipulated by the user (col. 20, lines 6-10).

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It would have been obvious to a person having ordinary skill in the art to have used the teaching of the remote operator of Edanami with the teaching of video conferencing across the telecommunication network of Potts in order to view onscreen the desired remote participant in a videoconferencing system. (See col. 18, lines 33-42 of Edanami.)

10. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts (US 6,593,956) in view of Kan (US 2003/0035479).

Claim 44, Potts teaches a camera arrangement according to claim 35, but does not expressly teach: comprising logic to alter a degree of data compression applied to portions of the image in dependence upon whether a face has been detected at those portions.

Kan teaches logic to alter a degree of data compression applied to portions of the image in dependence upon whether a foreground has been detected at those portions (A high compression rate is used in the still background while lower compression rate is used in the moving foreground; paragraph 0008).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the teaching of Kan with that of Potts in order to reduce amount of data compressed and transferred (See paragraph 0008 of Kan.).

Claim 45, Kan teaches that an apparatus operable to apply a harsher data compression to portions of a captured image not detected to contain a foreground (see paragraph 0008). It would have been obvious to a person having ordinary skill in the art to have recognized that the face of a moving speaker (taught by Potts) is the foreground of a captured image.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIA-WEI A. CHEN whose telephone number is

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(571)270-1707. The examiner can normally be reached on Monday - Friday, 7:30 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lin Ye/
Supervisory Patent Examiner, Art Unit 2622

/C. A. C./
Examiner, Art Unit 2622